

Amendments to the Specification

Please delete paragraph [0002], which appears in the specification at page 1, lines 4-23, and substitute the following paragraph [0002] in place thereof.

[0033] Consumers have expressed a growing preference for “Organic” foods, which are certified by Government Agencies to contain no chemical substances, such as pesticides, hormones, or synthetic chemicals not normally found in the natural food. Consumer concerns about the appropriateness of wild-caught seafood for human consumption (due to environmental damage and over exploitation of natural resources), as well as the perceived inferiority of animals raised on diets containing ingredients derived from pollution-contaminated and/or declining wild resources (*e.g.*, fishmeal and fish oil), have resulted in a need to develop an Organic aquaculture technology. Organic certification in the U.S. requires that the feeds provided to aquacultured species meet the requirements of the U.S. Organic Foods ~~Protection~~ Production Act of ~~1991–1990~~ (OFPA) and the USDA National Organic Program Standards (USDA-~~NOS~~ NOPS, 2002), which states that the total ration be composed of products that are Organically produced, and if applicable, Organically handled. To our knowledge, there does not appear to be a diet for any aquatic animal on the market that can meet the requirements for 100% Organic certification as defined by USDA-~~NOS~~ NOPS. Particularly problematic is the requirement for fishmeal and/or fish oil in the feed for optimal growth of certain animals (Sargent and Tacon 1999), especially carnivorous species. The aquatic animals presently marketed as food are either wild catch or produced in semi-intensive or highly intensive production systems that would not qualify for Organic certification.

Please delete paragraph [0018], which appears in the specification at page 7, lines 1-8, and substitute the following paragraph [0018] in place thereof.

[0018] An “Organic” certification for an aquatic animal requires that the animal is raised in such a way that 95% of the components in the feeds utilized for production are from certified Organic sources. The production processes used for these Organic fish, mollusks or crustaceans control the inputs and outputs of the production system to minimize the impact of aquatic animal production on the environment. For the purposes of this patent application capitalization is used to differentiate the statutory use of Organic as defined here from the chemical use of organic (*i.e.*, a carbon containing compound) as outlined in the USDA National Organic Program Standards (2002).

Please delete paragraph [0019], which appears in the specification at page 7, lines 9-15, and substitute the following paragraph [0019] in place thereof.

[0019] A “100% Organic Seafood” is any aquatic animal raised in such a way that 100% of the feeds utilized for production are from certified Organic sources. The production process used for these Organic seafood controls the inputs and outputs of the production system to minimize the impact of seafood production on the environment. For the purposes of this patent application capitalization is used to differentiate the statutory use of Organic as defined here from the chemical use of organic as outlined in the USDA National Organic Program Standards (2002).

Please delete paragraph [0033], which appears in the specification at page 10, lines 1-30, and substitute the following paragraph [0033] in place thereof.

[0033] Controlled aquatic production systems for finfish, shellfish and crustaceans, are known to those familiar with the art (Jory, McMahon et al. 2002). Organic management practices are defined by U.S. and international regulation (e.g., USDA National Organic Program Standards 2002) and can be followed for the production of “Organic” seafood (Hardy 2002). Full certification, however, requires that the feed components not be of animal origin. To date, the complete elimination of fish byproducts (meal and oil) from the feeds of aquatic animals has not been accomplished (Hardy 2002). A solution to improve consumer acceptance of aquacultured fish, mollusks or crustaceans is the production of Organic seafood or 100% Organic seafood which are raised under controlled conditions and fed diets that consist either 95%, or entirely, of certified Organic ingredients (within the limits and qualifications set by the USDA). The present invention describes for the first time a totally vegetarian diet for fish, mollusks, and crustaceans, wherein the fishmeal and/or fish oil is replaced by a combination of hydrolyzed plant protein, bacteria, and microalgae containing omega-3 LC-PUFAs. Such diets will support growth of marine animals in the absence of fishmeal/oil. With the selection of dietary components that are themselves “Organic,” as defined by standard Organic certifying bodies such as the National Organic Standards Board (NOSB) or the like, these novel feeds could also be classified for the first time as “Organic Feeds.” Such feeds would include only non-genetically modified feed materials, no antibiotics, and no fishmeal or fish oil. The feeding of fish, mollusks or crustaceans using management practices known in the art that would also be considered “Organic” by the standard Organic certifying bodies such as NOSB, would result in an animal that would have a unique composition and be classified for the first time as, for example, an “Organic Shrimp,” “Organic Catfish,” or “Organic Clam” under the criteria of standardized Organic certification bodies, such as NOSB. Production of 100% Organic seafood will require that all inputs be Organic certified and production methods approved through the NOSB. This invention also encompasses the use of these Organic feeds for terrestrial animals such as, but not limited to, pigs, cows, chickens, and companion animals (*e.g.*, cats, dogs, horses, *etc.*)